PUATEA002B, CPPSIS3001A
CPPSIS3005A, CPPSIS4006A
AND CPPSIS4015A

Mapping Team Member

TRAINER
GUIDE

(DRAFT VERSION 2 – June 2012)

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Acknowledgements

Introduction

Context

This Trainer Guide is part of the Mapping Team Member Training Resource Kit (TRK) intended to train members of Australasian fire and emergency service agencies in the knowledge and skills required to perform the role of Mapping Team Member in the Australasian Inter-service Incident Management System (AIIMS) during an emergency response.

The TRK for Mapping Team Member comprises the following parts:

- Trainer Guide;
- Learner Guide; and
- Assessment Guide.

The training has been designed to meet the needs of the Australasian fire and emergency services and is intended to be delivered within the context of emergency management.

This training targets personnel from emergency service agencies.

Competencies covered

The principles and concepts covered in this training are aligned to the following units of competency from the Australian Quality Training Framework 2011 (AQTF).

PUA00 Public Safety Training Package - Industry Wide Competency Standards

- PUATEA002B Work autonomously

CPP07 Property Services Training Package - Spatial Information Services Units of Competency

- CPPSIS3001A Apply map presentation principles
- CPPSIS3005A Collect basic spatial data
- CPPSIS4006A Read and interpret basic image data
- CPPSIS4015A Apply GIS software to problem-solving techniques

On successful completion of these units, Registered Training Organisations (RTOs) should award learners with nationally recognised Statement of Attainment for each unit.

RTOs should note that, if applied within the fire context, learners are to possess PUATEA001B Work in a team, which is a pre-requisite to the unit PUATEA002B Work autonomously.

Learning outcomes

At the completion of the Mapping Team Member training, learners should be able to:

- Work under limited supervision as a member of the Mapping Team during an emergency response;

- Collect basic data using information technology and equipment within a spatial information handling framework;

- Interpret (i.e. to identify, analyse and evaluate) information from various types of image data;

- Apply GIS software correctly to resolve problems and use spatial and aspatial data in an integrated manner; and

- Create maps, as required by the agency, with the aid of a GIS system.

Implementation

This Training Resource Kit (TRK) can only be implemented by RTOs in accordance with the requirements of the AQTF standards for RTOs.

Further detailed information on delivery and assessment is available in a generic PSTP Implementation Handbook and an accompanying Information Booklet for Assessors. Copies of both of these are available from AFAC.

Nominal duration

The total nominal hours for the five units of competency delivered through this training is **230 hours** of supervised training and practice, as follow:

- PUATEA002B Work autonomously   30 hour
- CPPSIS3001A Apply map presentation principles   30 hours
- CPPSIS3005A Collect basic spatial data   60 hours
- CPPSIS4006A Read and interpret basic image data   40 hours
- CPPSIS4015A Apply GIS software to problem-solving techniques   70 hours

This includes:

- Pre-course reading;

- Formal face-to-face training;

- Post-course supervised practice; and

- Assessment

Learning Pathways

All learners can seek recognition for this training through the Recognition of Prior Learning (RPL) or Recognition of Current Competence (RCC) process of the training provider.

Training providers must ensure that their processes for the RPL and RCC are consistent with the AQTF requirements for mutual recognition and RPL.

Some learners may already hold the relevant underpinning knowledge and should therefore be given the opportunity to apply for recognition for part of the training.

Customisation

Resources for this unit support a flexible approach to training delivery. They can be adapted or modified to suit a particular target audience.

Much of the training is agency-specific and the agency **will need to customise the materials** to account for:

- Emergency type managed (e.g. flood, fire);
- Agency-specific procedures;
- The agency Geographic Information System;
- Agency spatial information collection technologies;
- The data and image files used by the agency; and
- Other agency-specific requirements.

The training delivered must adhere to the competency standards.

Trainer and Assessor competencies

RTOs must ensure that training and assessment is delivered by trainers and assessors who:

(a) have the necessary training and assessment competencies as determined by the National Quality Council or its successors, and

(b) have the relevant vocational competencies at least to the level being delivered or assessed, and

(c) can demonstrate current industry skills directly relevant to the training/assessment being undertaken, and

(d) continue to develop their Vocational Education and Training (VET) knowledge and skills as well as their industry currency and trainer/assessor competence.

Subject matter experts and 'training assistants' can assist the trainer if required.

Compliance

Compliance issues must be addressed before undertaking delivery of this unit. The following information provides some guidance but may need to be supplemented with agency-specific details.

Occupational health and safety

Specific occupational health and safety (OHS) legislation in each state and territory provides a framework for improving standards of workplace health and safety, and for reducing work-related accidents and diseases.

Such OHS legislation in some cases has provided for Codes of Practice to give practical guidance for operations in specific types of workplaces. Where such Codes of Practice specify operational guidelines, these should be observed. Operational guidelines may require risk assessment before work commences, and risk controls measures during work.

Standard Operating Procedures

Any relevant agency specific Standard Operating Procedures (SOPs) must be adhered. SOPs are any organisational directives that establish a standard course of action. They are written, official, applied to all situations and enforced and integrated into the organisation's management systems.

Suggested approach to the training

Introduction

The suggested approach to the training is:

- Confirmation of pre-requisite competency requirements;
- Confirmation of course entry requirements;
- Completion of pre-course reading;
- Formal face-to-face training;
- Post-course supervised practice; and
- Assessment

Pre-requisite requirement

If applied within the fire context, learners are to possess the following unit of competency, which is a pre-requisite to the unit PUATEA002B Work autonomously:

- PUATEA001B Work in a team

The TRK, including this Trainer Guide, contains materials for the concurrent training and assessment of this unit with PUATEA002B Work autonomously.

Course entry requirements

Due to the level of skill required by the competency standards, it is suggested that participants undertaking the training possess the following skills prior to commencing the training.

- Ability to relate to people from a range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities;
- Analytical skills;
- Communication skills to:
  - discuss vocational issues effectively with colleagues;
  - impart knowledge and ideas through oral, written and visual means;
- Computer skills (technical user level) to complete business documentation;

- Interpretation of technical task requirements;
- Literacy skills to:
  - assess and use workplace information;
  - interpret and understand legal, financial and procedural requirements;
  - process workplace documentation;
  - read, record data and write technical reports;
  - research and access routine sources of spatial data;
- Numeracy skills to:
  - record and interpret statistics;
  - record with accuracy and precision;
  - undertake computations;
- Organisational skills to:
  - prepare and administer documentation;
  - prioritise activities to meet contractual requirements;
- Quality assurance skills;
- Spatial skills to:
  - apply understanding of height, depth, breadth, dimension and position to actual operational activity and virtual representation;
  - exercise precision and accuracy in relation to basic design application; and
- Time management skills.

These entry skills are included in the assessment but are not the training for Mapping Team Member.

Pre-course reading

Learners are to read Learner Guide and complete pre-course reading prior to commencing the formal training, as this covers the essential underpinning knowledge for the training.

Learner Guides should be distributed approximately one month before the course.

Formal training

Learner facilities and resources

Suggested minimum resources and references required for quality outcomes are detailed below.

Facilities

- A comfortable training room with computers and agency network access.

Equipment

- Data projector/computer/screen for presentations;
- Computer per person or pair (loaded with agency GIS and map data);
- A Mapping team setup (in an actual or simulated Incident Control Centre);
- Mapping Team equipment e.g. printers and plotters, and consumables (paper);
- Spatial information (SI) technology used by the agency e.g.
  - Global Position System (GPS);
  - Imagery;
  - Video;

- Manual data collection; and
- Hand drawn maps etc.

Learning Resources

- Copies of the course program;
- Mapping Team Member PowerPoint presentation (updated with agency information);
- Pre-prepared sample agency-specific data collection plan (for handout);
- Two (2) incident scenarios and related datasets;
- Hard copy images (emergency related);
- Digital images (emergency related);
- Sample agency standard map products; and
- Instructions regarding information products to be developed;

Texts /Manuals

- Learner Guide per learner;
- Agency manual for operation of Geographic Information System; and
- Agency policies and procedures for emergency work (e.g. OHS).

Instructional strategy

The formal part of the training covers needs to meet the requirements of five units of competency. The instructional strategy is a mix of:

- Presentation;
- Discussion; and
- Activities.

For sessions that require **discussion**, the suggested approach is to use an interactive approach, with the trainer asking questions and opening up discussion amongst the learners. The lesson plans include questions for the trainer to ask, but not answers, as this could tempt the trainer to read from the lesson plans, rather than using an interactive approach.

The unit PUATEA002B Work autonomously requires learners to work in a small team and to assume leadership of that team for a defined period.

The suggested approach is therefore to:

- Conduct the training, using an approach that **simulates working in an Incident Management Team.**

- **Set up the training venue in an Incident Control Centre (ICC) (or in an arrangement that simulates an ICC), with the equipment used by the Mapping Team.**

- **Organise the learners into small teams** (suggest 3 or 4 people per team, sitting together) for the duration of the training. Each group will simulate a 'Mapping Team'.

- **Each group ('Mapping Team') will have a leader. This role will be rotated amongst the team members, so that each person gets the opportunity to experience leadership.**

- The nominated team leader should lead their 'Mapping Team', organising and supervising the activities of the team for a set period of time (agency to specify).

- **The nominated team leader should conduct a 'shift handover'** to the new team leader at the conclusion of their period of leadership.

- **The trainer can pretend to be the Situation Officer**, giving instructions to each Mapping Team Leader to take back to the team.

Suggested program

Times are an estimate only and will vary according to the number of learners, the previous experience of the learners and the needs of the agency. The total hours of the face-to-face component of the training is estimated at 21 hours (i.e. approximately three days of structured training and practice).

Session	Estimated time
Introduction and overview of the course	30 mins
Working in the Mapping Team • Part 1 – The Mapping Team in AIIMS • Part 2 – Workspace and equipment for the Mapping Team • Part 3 – Agency policy and procedures for emergency work • Part 4 – Acting as a team member	2 hours
Leading the Mapping Team • Part 1 – Review of pre-course reading • Part 2 – Acting as a team leader for a defined period • Part 3 – Shift handover	1 hour
Introduction to agency GIS • Part 1 – Introduction of agency GIS • Part 2 – File naming and storage	2 hours 30 mins
Collecting spatial data • Part 1 - Review of pre-course reading • Part 2 – Select, maintain and operate agency SI equipment • Part 3 - Gather basic data • Part 4 – Prepare data collection plan • Part 5 – Data collection exercise	5 hours
Interpreting image data • Part 1 - Review pre-course reading • Part 2 – Types of agency image data • Part 3 – Interpretation of image data • Part 4 – Manual transfer of image data onto a map • Part 5 – Electronic image rectification and transfer • Part 6 – Image interpretation exercise	3 hours
Mapping products • Part 1 - Review pre-course reading • Part 2 – Agency map products and standards • Part 3 – Production of standard agency maps	3 hours
Apply GIS software to problem-solving technique • Part 1 – Review pre-course reading • Part 2 – Querying spatial data • Part 3 – Geo-processing • Part 4 – Producing information products	3 hours +
Explanation of assessment process	15 mins
Evaluation and conclusion	15 mins

Post-course practice

Learners will need to practice their skills in either an actual or simulated workplace environment under supervision from an experienced Mapping Team Member prior to final assessment.

Individual learners will vary in the amount of time required to attain competence.

Assessment

Assessment should be conducted in accordance with the process in the Mapping Team Member Assessment Guide. In summary, Assessors should ensure that the assessment for Mapping Team Member is:

- Based on the performance criteria, evidence guide, range statement, and required skills and knowledge of the units of competency covered by this TRK;

- Demonstrated over a period of time and observed by the assessor (or assessment team working together to conduct the assessment);

- Demonstrated in a range of situations, that may interruptions and involvement in related activities normally experienced in the workplace; and

- Obtained by observing activities in an emergency management context - if this is not practicable, observation in realistic simulated environments may be substituted.

Evidence should be gathered over a period of time in a range of actual or simulated workplace environments.

The Assessor may use supplementary evidence, for example authenticated correspondence from existing supervisors, team leaders or specialist training staff.

RTOs should retain a record of the evidence collected, in accordance with RTO policies.

Session plan – Introduction and overview

Session overview

This session provides learners with an overview to the entire Mapping Team Member training program, including the entry requirements, requirements for pre-course reading, structured tuition, on-the-job practice and assessment.

Duration:

30 mins

Customisation

Agencies may need to customise this section to account for variations made to the program to meet agency needs.

General approach

This session contains one part:

Resources

- PowerPoint presentation
- Copies of the course program

Welcome and introductions

- Welcome learners and introduce yourself.
- Invite learners to introduce themselves (name and job role) and to outline previous experience in emergency management and/or mapping.
- Conduct an icebreaker activity (optional).

Course aim and learning outcomes

At the completion of the training, learners should be able to work under limited supervision as a member of the Mapping Team within the Australasian Inter-service Incident Management System (AIIMS) during an emergency response.

At the completion of the Mapping Team Member training, learners should be able to:

- Work under limited supervision as a member of the Mapping Team during emergency response;

- Collect basic data using information technology and equipment within a spatial information handling framework;

- Interpret (i.e. to identify, analyse and evaluate) information from various types of image data;

- Apply GIS software correctly to resolve problems and use spatial and aspatial data in an integrated manner; and

- Create a map, as required by the agency, with the aid of a GIS system.

Training approach

The training has been designed for the following sequence:

- Confirmation of pre-requisite requirements;

- Confirmation of course entry requirements;

- Completion of pre-course reading;

- Formal training;

- Post-course supervised practice; and

- Assessment.

Pre-requisite requirement

If applied within the fire context, learners are to possess the following unit of competency, which is a pre-requisite to the unit PUATEA002B Work autonomously:

- PUATEA001B Work in a team

Course entry requirements

This TRK has been developed on the basis of learners meeting course entry requirements regarding communication skills, literacy, numeracy, computer skills etc. These are:

- Ability to relate to people from a range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities;
- Analytical skills;
- Communication skills to:
    - discuss vocational issues effectively with colleagues;
    - impart knowledge and ideas through oral, written and visual means;
- Computer skills (technical user level) to complete business documentation;
- Interpretation of technical task requirements;
- Literacy skills to:
    - assess and use workplace information;

- interpret and understand legal, financial and procedural requirements;
- process workplace documentation;
- read, record data and write technical reports;
- research and access routine sources of spatial data;

- Numeracy skills to:
    - record and interpret statistics;
    - record with accuracy and precision;
    - undertake computations;
- Organisational skills to:
    - prepare and administer documentation;
    - prioritise activities to meet contractual requirements;
- Quality assurance skills;
- Spatial skills to:
    - apply understanding of height, depth, breadth, dimension and position to actual operational activity and virtual representation;
    - exercise precision and accuracy in relation to basic design application; and
- Time management skills.

Pre-course reading

Learners are to read the Mapping Team Member Learner Guide and complete self-assessment questions prior to commencing the formal training. This covers the essential underpinning knowledge for the training.

Formal training

This course.

Post-course practice

Learners will need to practice their skills in either an actual or simulated workplace environment under supervision from an experienced Mapping Team Member prior to final assessment.

Individual learners will vary in the amount of time required to attain competence.

Assessment

Assessment will be conducted in accordance with the process in the Mapping Team Member Assessment Guide.

This will be explained in more detail in a later session.

Outline

The formal part of the training covers needs to meet the requirements of five units of competency.

The instructional strategy is a mix of:

- Presentation;
- Discussion; and
- Activities

The unit PUATEA002B Work autonomously requires learners to work in a small team and to assume leadership of that team for a defined period.

The suggested approach is therefore to:

- Conduct the training, using an approach that **simulates working in an Incident Management Team;**

- **Set up the training venue in an Incident Control Centre (ICC) (or in an arrangement that simulates an ICC), with the equipment used by the Mapping Team;**

- **Organise the learners into small teams** (suggest 3 or 4 people per team, sitting together) for the duration of the training. Each group will simulate a 'Mapping Team';

- **Each group ('Mapping Team') will have a leader. This role will be rotated amongst the team members, so that each person gets the opportunity to experience leadership;**

- The nominated team leader should lead their 'Mapping Team', organising and supervising the activities of the team for a set period of time (agency to specify);

- **The nominated team leader should conduct a 'shift handover'** to the new team leader at the conclusion of their period of leadership; and

- **The trainer can pretend to be the Situation Officer**, giving instructions to each Mapping Team Leader to take back to the team.

Program

Handout and explain program.

Session plan – Working in the Mapping Team

Session overview

This session covers working in a small team in the Mapping Team during an incident. The formal part of this training is limited to the pre-course reading, and some presentation and discussion.

The remainder of the training required learners to work in a small team for the duration of the structured tuition.

- Conduct the training, using an approach that **simulates working in an Incident Management Team.**

- **Set up the training venue in an Incident Control Centre (ICC) (or in an arrangement that simulates an ICC), with the equipment used by the Mapping Team.**

- **Organise the learners into small teams** (suggest 3 or 4 people per team, sitting together) for the duration of the training. Each group will simulate a 'Mapping Team'.

- **Each group ('Mapping Team') will have a leader. This role will be rotated amongst the team members, so that each person gets the opportunity to experience leadership.**

- The nominated team leader should lead their 'Mapping Team', organising and supervising the activities of the team for a set period of time (agency to specify).

- **The nominated team leader should conduct a 'shift handover'** to the new team leader at the conclusion of their period of leadership.

- **The trainer can pretend to be the Situation Officer**, giving instructions to each Mapping Team Leader to take back to the team.

The practical activities for this unit will run concurrently with the other activities for the Mapping Team Member training.

Duration

2 hours of presentation plus practice working in a team, conducted concurrently with other activities

Customisation

The agency may need to **customise the materials in this section** to account for:

- Emergency type managed by the agency (e.g. flood, fire); and

- Agency procedures.

General approach

This session contains the following parts:

Part 1 – The Mapping Team in AIIMS		30 mins
Part 2 – Workspace and equipment for the Mapping Team		45 mins
Part 3 – Agency policy and procedures for emergency work		30 mins
Part 4 – Acting as a Team Member		15 mins

Resources

- Learner Guide Sections 1 and 2;

- A Mapping team setup (in an actual or simulated Incident Control Centre);

- Mapping Team equipment e.g. printers and plotters;

- Equipment consumables e.g. paper; and

- Copies of agencies policies and procedures for emergency work.

Instructional design

The suggested approach is to use an interactive approach, with the trainer asking questions and opening up discussion amongst the learners. The lesson plan includes questions for the trainer to ask, but not answers, as this could tempt the trainer to read from the lesson plans rather than lead the class in an interactive approach.

The practical component of the training should be conducted concurrently with other parts of the program.

Part 1 – The Mapping Team in AIIMS

Session aim

The session aims to outline where the Mapping team fits into AIIMS and the structure and roles of the Mapping Team.

Duration

Estimated 30 mins

Resources

Learner Guide Section 1

Learning outcomes

At the end of this session, learners should be able to:

- Identify where the Mapping Team fits into the incident management system.

- Identify the respective roles, responsibilities and interrelationships within the Mapping Team.

- Explain the origins of requests for mapping products during emergencies and how these requests are communicated to the Mapping Team.

Instructional design

The suggested approach is to use an interactive approach, with the trainer asking questions and opening up discussion amongst the learners. The lesson plan includes questions for the trainer to ask, but not answers, as this could tempt the trainer to read from the lesson plans rather than lead the class in an interactive approach.

Context

Ask and discuss:

- Who has worked within the AIIMS system at emergencies?

- Has anyone worked within the Mapping Team in the AIIMS system?

Principles of AIIMS

Ask and discuss:

- What are the principles of AIIMS?

- How is the Incident Controller appointed?

- Which roles are in the IMT?

- What are their functions?

The Planning function

Ask and discuss:

- What is the role of the Planning Section?

The Situation Unit

Ask and discuss:

- What is the role of the Situation Unit?

The Mapping Team

Ask and discuss:

- What is the function of the Mapping Team?

- What are the roles in the Mapping Team?

- Under what circumstances would a Mapping Team Member need to lead a small team?

- Where do the requests for mapping products come from?

- How does the Mapping team get its instructions?

Working in the Mapping Team

Ask and discuss:

- What makes a good team player?

- What does a Mapping Team Member need to know when receiving instructions from their supervisor during emergency work?

- What information Mapping Team Member need to give to their supervisor when reporting back during emergency work?

Part 3 – Workspace and equipment for the Mapping Team

Session aim

The session aims to introduce learners to the workspace and equipment requirements for the Mapping Team.

Duration

Estimated 45 mins

Resources

- A Mapping Team setup (in an actual or simulated Incident Control Centre);

- Mapping Team equipment e.g. printers and plotters;

- Equipment consumables e.g. paper; and

- 'Training assistants' (optional) to help supervise equipment use.

Learning outcomes

At the end of this session, learners should be able to:

- Identify the workspace requirements for the effective functioning of the Mapping Team.

- Identify and operate the key equipment for the Mapping Team safely and in accordance with the manufacturer and agency requirements.

Instructional design

The trainer is to walk the learners around the workspace and equipment, explaining how everything works. Learners should then be given the opportunity to practice using all the equipment.

One way of managing this is to break the learners into small teams and have them rotate through a series of equipment stations. This approach may need some 'training assistants' to help supervise each piece of equipment and ensure safety (of the learners and the equipment).

For each piece of equipment, the trainer should use the approach:

Explanation;

Demonstration;

Learner practice; and

Summary.

The trainer should ensure there are sufficient pieces of equipment for the learners to keep active as much as possible.

Part 4 – Agency policy and procedures for emergency work

Session aim

The session aims to introduce the agency's policy and procedures for emergency work, including occupational health and safety.

Duration

Estimated 30 mins

Resources

Copies of agencies policies and procedures for emergency work.

Learning outcomes

At the end of this session, learners should be able to:

- Identify the key features of agency workplace policies for emergency work.

Instructional design

The suggested approach is an interactive approach, with the trainer asking questions and opening up discussion amongst the learners. The lesson plan includes questions for the trainer to ask, but not answers, as this could tempt the trainer to read from the lesson plans rather than lead the class in an interactive approach.

Context

Team members must always work within the bounds set by the policies and procedures of the agency. These ensure the agency complies with its legal obligations in areas such as equal employment opportunity (EEO), anti-discrimination and OHS.

Agency policy

Handout and discuss:

- Agency policy and procedures relevant to Mapping Team Member working during an emergency
- Agency OHS policy

Ask and discuss:

- What should you do if you find a hazard in the workplace?

Part 5 – Act as team member

Session aim

This session outlines how the structured part of the training will be conducted for the duration of the course. Learners will be organised into small groups and will be required to work **as part of a small team** for the duration of the structured tuition.

Each group (i.e. 'Mapping Team') will have a leader. This role will be rotated amongst the team members, so that each person gets the opportunity to experience leadership.

> **HOWEVER – NOTE THAT THE LEADERSHIP PART OF THE TRAINING IS COVERED IN THE NEXT SESSION. AGENCIES MAY CHOOSE THE RUN THESE TWO SESSIONS CONCURRENTLY.**

Each person must be able to demonstrate:

- Undertaking required work activities;
- Accepting responsibilities;
- Setting performance requirements;
- Maintaining team performance; and
- Acting as a team leader as required.

Duration

Estimated 15 mins

Learning outcomes

At the end of the training for Mapping Team Member, learners should be able to:

1. Obtain work instructions and performance expectations from the supervisor.
2. Perform tasks as directed and communicate progress to the supervisor.
3. Give feedback and constructive advice to the supervisor.
4. Either rectify or solve problems and refer those which cannot be rectified to the supervisor.
5. Advise supervisor of any changes in priorities or tasks.
6. Identify and completed any performance-related documentation.
7. Advise supervisor of the outcome of tasks delegated.

Context

Learners are expected to act as a member of a team or as an individual for periods of time without direct supervision and for mentoring and coaching either in an operational or non-operational environment.   The learners are to be organised into small teams (suggest 3 or 4 people per team, sitting together) for the duration of the training, with the leadership function rotated.

Team members should pay attention to ensure they participate in the activities fully as a team member, in accordance with the required learning outcomes.

Session plan – Leading the Mapping Team

Session overview

This session relates to the Mapping Team members being required to lead the Mapping Team for a required period.   The session also includes shift handover.

**NOTE THAT THIS SESSION RELATES TO THE PREVIOUS SESSION.
AGENCIES MAY CHOOSE THE RUN THESE TWO SESSIONS CONCURRENTLY.**

Duration

1 hour of presentation plus practice conducted concurrently with other activities

General approach

This session contains the following parts:

Part 1 – Review of the pre-course reading (Learner Guide Section 9 and 10)   1 hour

Part 2 – Act as team leader for a defined period   Not specified

Part 3 – Shift handover exercises   Not specified

The activities for Part 2 and 3 should be integrated with the other activities for Mapping Team Member.

Resources

- Learner Guide Sections 9 and 10

Part 1 – Review of pre-course reading

Session aim

The session aims to review the pre-course reading (Learner Guide Section 9 and 10).

Duration

Estimated 1 hour

Resources

Learner Guide sections 9 and 10

Instructional design

Review the self-assessment questions and answers from the pre-course reading.

Check for understanding.

Part 2 – Act as team leader for a defined period

Context

The Mapping Team Member may need to lead a small group of Mapping Team Assistants (e.g. 1 to 3 persons) in the Mapping Team. Examples of the circumstances where this could apply are:

- Leading the whole Mapping Team at a small to medium-sized incident; or
- Leading a small group of Mapping Team Assistants at a major incident, but within a larger team managed by the Mapping Team Leader.

Context

This relates to the training outlined in the previous section.

Learners will be organised into small teams (suggest 3 or 4 people per team, sitting together) for the duration of the training, with the leadership function rotated.

The nominated leader, after receiving instructions, should organise and supervise the activities of the small team, paying attention to ensure they lead the team according to the following learning outcomes.

Learning outcomes

At the end of this session, learners should be able to:

1. Establish team goals and identify the tasks required to achieve the goals.

2. Communicate instructions to team members clearly and unambiguously.

3. Respond effectively to team members' concerns and queries.

4. Communicate any legal requirements or ramifications of team activities to team members.

5. Establish and allocate team member tasks having regard to the skills and knowledge required to achieve the tasks and the skills and knowledge of team members.

6. Seek and discuss feedback on own performance as Team Leader.

7. Refer issues to the appropriate authority.

Instructional design

This training will need to be incorporated with other activities for Mapping Team Member.

Part 3 – Shift handover

Session aim

This session aims to outline the process a Mapping Team Leader should follow at a shift handover.

Context

A smooth handover between the outgoing and incoming Mapping Team at shift changeover is essential to ensure the continuity of mapping services to incident management. A smooth handover requires:

- Incident Logs to be maintained throughout the shift;

- Maps produced during the current shift to be properly stored;

- Handover notes to be prepared;

- Maps produced during the shift to be printed;

- The incoming shift to be briefed; and

- An After-Action-Review (AAR) to be conducted.

The nominated team leader should ensure logs and appropriate records are maintained throughout the exercise and the incoming team leader appropriately briefed.

Learning outcomes

At the end of this session, learners should be able to:

1. Prepare a shift handover briefing for the incoming Mapping Team.

2. Conduct an operational debrief for team activities.

Instructional design

This training will need to be incorporated with other activities for Mapping Team Member.

Each nominated Team Leader must conduct a handover to the incoming Team Leader for the duration of the training (i.e. at the end of each session, conduct a handover to the incoming person).

Section

6

Session plan – Introduction to agency GIS

Session overview

This session aims to introduce learners to the agency Geographic Information System (GIS).

Duration:

Estimated 2 hours

Customisation

Agencies will need to supplement the materials in this section to suit the needs of their GIS.

General approach

This session contains two part:

Part 1 – Introduction of agency GIS   1 hour 45 mins

Part 2 – File naming and storage   15 mins

Resources

- Learner Guide Section 4;
- Computer per person or pair (loaded with agency GIS and map data); and
- Manual for operation of agency GIS.

Part 1 – Introduction to GIS

Session aim

This session aims to introduce learners to the agency's GIS, including:

- Login;

- Navigation around key features; and
- Other agency specific technical requirements

Duration

Estimated 1 hour and 45 mins

Learning outcomes

At the end of this session, learners should be able to:

1. Demonstrate the safe, efficient and effective use of keyboard and computer hardware equipment.
2. Update skills and knowledge to accommodate changes in GIS software.

Instructional design

Explanation, demonstration and learner practice.

Part 2 – File naming and storage

Session aim

This session aims to introduce learners to the agency's GIS, including:

- File naming and directory standards; and
- Agency standards for metadata.

Duration

Estimated 15 minutes

Learning outcomes

At the end of this session, learners should be able to:

1. Document metadata according to agency standards.
2. Store and record new and existing spatial data according to organisational guidelines.

Instructional design

Explanation, demonstration and learner practice.

Session plan – Collecting spatial data

Session overview

This session covers the outcomes required to collect basic data through a range of methods. It requires the ability to work with others in performing set task requirements within deadlines. It also requires the ability to perform a range of basic activities in the use of information technology and equipment within a spatial information handling framework. Functions would be carried out under supervision, often in a team environment, and within organisational guidelines.

Duration:

Estimated 5 hours plus pre-course reading and practice (note - the actual duration will depend on the number of technologies, the range of datasets to be entered and the number of trainees)

Customisation

Much of the training is agency-specific and the agency **will need to customise the materials in this section** to account for:

- Emergency type managed by the agency (e.g. flood, fire);

- The spatial information (SI) technology used by the agency; and

- The datasets commonly used by the agency.

General approach

This session contains the following parts:

Part 1 – Review of the pre-course reading (Learner Guide Section 4)   30 mins

Part 2 – Select, operate and maintain agency SI equipment (practical)   1 hour

Part 3 – Gather basic data *(practical)*

- Entering data from grid references   15-30 mins

- Entering data from hand-drawn maps   15-30 mins

- Entering data from GPS   15-30 mins

• Entering data from shape files	15-30 mins
• Entering data from other databases	15-30 mins
• Other (as required by the agency)	15-30 mins
Part 4 – Prepare data collection plan	15 minutes
Part 5 – Exercise *(practical – using second dataset)*	1 hour

Resources

- Learner Guide Section 4;
- Computer per person or pair (loaded with agency GIS and map data);
- The spatial information (SI) technology used by the agency e.g.
    - Global Position System (GPS);
    - Coordinate Geometry (COGO);
    - Imagery;
    - Video;
    - Manual data collection;
    - Hand drawn maps etc;
- Pre-prepared sample agency-specific data collection plan (for handout);
- Two (2) incident scenarios and related datasets e.g
    - Grid references;
    - Simple hand-drawn maps;
    - GPS data;
    - Shape files;
    - Data from other databases; and
- Exercise instructions (copies).

Part 1 - Review pre-course reading

Session aim

This session aims to review the pre-course reading.

Duration

Estimated 30 minutes

Resources

The Learner Guide contains generic underpinning knowledge for this training, which learners should have completed prior to the session.

Instructional design

Review the self-assessment questions and answers from the pre-course reading.

Check for understanding.

Part 2 – Select, maintain and operate agency SI equipment.

Session aim

The session aims to train learners to select, maintain and operate SI equipment.

This is to be a practical session using the SI equipment used by the agency (for example, GPS).

Duration

Estimated 1 hour

Learning outcomes

At the end of this session, learners should be able to:

1. Identify the SI technologies used by the agency.
2. Identify any contingencies that may affect equipment usage.
3. Prepare and check the SI equipment.
4. Operate the agency's SIS equipment according to agency and the manufacturer's requirements.
5. Comply with all safety precautions and requirements for operating equipment.
6. Report and refer for repair any unsafe or faulty equipment.
7. Maintain equipment according to agency requirements.
8. Store equipment safely in appropriate locations.

Resources

The ideal situation is one piece of equipment per learner. Options are

- One item shared between each pair of learners; or
- Equipment stations set up – with small groups rotating through these (subject matter experts will be required to assist).

Instructional design

For each piece of equipment, the trainer should use the approach:

> Explanation;
>
> Demonstration;
>
> Learner practice; and
>
> Summary.

The trainer should ensure there are sufficient pieces of equipment for the learners to be kept active as much as possible.

Part 3 - Gather and enter basic data

Session aim

This session aims to train learners to collect and download datasets into a GIS.

This is to be a practical session – with all learners practicing.

Duration

Estimated 15-30 minutes per dataset.

The actual duration will depend upon the time required to practice entering the dataset.

Learning outcomes

At the end of this section, learners should be able to:

1. Record data correctly and according to specifications.
2. Access, read, interpret and edit spatial data updates to ensure they are in an acceptable format to meet functional requirements.
3. Display spatial information as features (entities) and attributes according to agency requirements.
4. Identify, record and report any discrepancies between the specifications and actual activities.
5. Record metadata according to agency standards.
6. Identify and comply with any agency administrative or legal requirements for data collection.
7. Store data and documentation according to agency guidelines.

Resources

Data sets **relating to one incident** managed by your agency, for example:

- Grid references;
- Simple hand-drawn maps;
- GPS data;
- Shape files; and
1. Data from other databases.

Instructional design

This session should cover:

- Any administrative or legal requirements for data collection;
- Downloading data;
- Recording data according to agency procedures; and
- Metadata requirements.

For each type of dataset, the trainer should use the approach:

<blockquote>
Explanation;

Demonstration;

Learner practice; and

Summary.
</blockquote>

Part 4 – Prepare data collection plan

Session aim

The session aim is to for learners to prepare a plan for the collection of data for an incident.

Duration

Estimated 15 minutes

Learning outcomes

At the end of this section, learners should be able to:

1. Identify the process for approving data collection.

2. Prepare a data collection plan for use by the agency.

Resources

PowerPoint presentation and pre-prepared sample data collection plan.

Part 5 – Data collection exercise

Session aim

This session aims to train learners to collect and enter spatial data for an emergency situation.

This is to be a practical session which simulates an emergency situation

Duration

Estimated 1 hour

Resources

Pre-prepared incident scenario and associated datasets. The trainer is to role-play the Situation Officer.

Participant instructions

You are Mapping Team Members deployed to an Incident Control Centre to assist an Incident Management Team. You report to Situation Unit Leader.

The Situation Unit Leader (the trainer) will give you a scenario and ask you to:

- Prepare a simple data collection plan and

- Using data requested (given to you by the Situation Officer), map the current extent of the incident.

Session plan – Interpreting image data

Session overview

This session covers the outcomes required to interpret information from various types of image data. It requires the ability to identify, analyse and evaluate image data to fulfil project requirements. Functions would be carried out under limited supervision and within organisational guidelines.

Duration

Estimated 3 hours plus pre-course reading and practice (note the duration will depend on the number and complexity of the image data and the number of trainees)

Customisation

Much of the training is agency-specific and the agency **will need to customise the materials in this section** to account for:

- Emergency type managed by the agency (e.g. flood, fire)

- The image data used by the agency

General approach

This session contains the following parts:

Part 1 – Review of the pre-course reading (Learner Guide Section 6)	30 mins
Part 2 – Types of agency image data	30 mins
Part 3 – Interpretation of image data	30 mins
Part 4 – Manual transfer of image data onto a map	30 mins
Part 5 – Electronic image rectification and transfer	30 mins
Part 6 – Exercise	30 mins

Resources

- Learner Guide Section 6;

- PowerPoint presentation (updated with agency information);

- Computer per person or pair (loaded with agency GIS and map data);

- Hard copy images;

- Digital images; and

- Sample image files for the exercise.

Note – the same image data could be used for each part of the program.

Part 1 - Review pre-course reading

Session aim

The session aim is to review the pre-course reading (Learner Guide Section 6).

Duration

Estimated 30 minutes

Resources

The Learner Guide contains generic underpinning knowledge for this training, which Learners should have completed prior to the session.

Instructional design

Review the self-assessment questions and answers from the pre-course reading.

Check for understanding.

Part 2 – Types of agency image data

Session aim

The aim of the session is to introduce learners to the image data used by the agency.

Duration

Estimated 30 mins

Learning outcomes

At the end of this session, learners should be able to:

1. Identify the image data used by the agency for emergency management.

2. Identify the sources of agency image data.

3. Identify the properties of the agency image data.

4. Identify the constraints of the agency image data.

Resources

Either:

- Embed the image data into a PowerPoint presentation; or
- Have samples of the actual image data to show.

The ideal situation is for each learner to have a sample of the image data.

Instructional design

The aim of the session is to introduce learners to the image data used by the agency.

This could be a presentation and explanation session.

Part 3 – Interpretation of image data

Session aim

The session aim is to train learners to interpret image data in the context of emergencies managed by the agency.

Duration

Estimated 30 mins

Learning outcomes

At the end of this session, learners should be able to

- Accurately interpret image data for emergency management purposes.

Resources

- Hard copy (emergency-related) images
- Digital (emergency-related) images

Instructional design

Learners should be shown images, relating to an incident, and shown how to interpret shape, size, colour, shadow, texture, pattern, association, site, time and resolution.

Activity

The learners should be:

- given samples of image data relating to an incident, and
- asked to provide an interpretation of the current situation to the Situation Unit Leader.

Learners could work in small groups and present their findings to the whole group.

Part 4 – Manual transfer of image data onto a map

Session aim

The session aim is to train learners to transfer hard copy image data onto a topographic (or other) map. The image data used could be the same as used for Part 3 – Interpreting image data.

Duration

Estimated 30 mins

Learning outcomes

At the end of this session, learners should be able to:

1. Transfer image data onto a map base.

2. Solve image data problems where possible.

Resources

Each learner (or small group) should be provided with:

- Hard copy (emergency-related) images; and

- Related topographic (or other) map.

Instructional design

This is to be a practical session where learners are to practice transferring the features of hard copy data directly onto a topographic map.

The trainer should follow the process of:

> Explanation;
>
> Demonstration;
>
> Learner practice; and
>
> Summary.+

Part 5 – Electronic image rectification and transfer

Session aim

The aim of this session is for learners to electronically rectify and transfer image data onto a map base.

Duration

Estimated 30 mins

Learning outcomes

At the end of this session, learners should be able to:

1. Align the image data with survey area using spatial reference systems.
2. Determine the scale of digital and hard copy image data.
3. Resolve any problems involving acquired image data.

Resources

- Computer per person or pair (loaded with agency GIS and map data); and
- Digital images.

Instructional design

This session should cover:

- Scale rectification; and
- Datum and projection conversion.

For each image, the trainer should use the approach:

Explanation;

Demonstration;

Learner practice; and

Summary.

Part 6 – Image interpretation exercise

Session aim

The session aim is for learners to practice interpreting image date during incident management. The exercise should simulate an actual incident.

Duration

Estimated 30 minutes

Resources

Incident related image and associated map (both can be either electronic or hard copy).

Participant instructions

You are Mapping Team Members deployed to an Incident Control Centre to assist an Incident Management Team. You report to the Situation Unit Leader (trainer).

The Situation Unit Leader will give you an image and ask you to:

- Transfer the image onto a map, and
- Provide an interpretation of the information shown on the image.

Section

9

Session plan – Mapping products

Session overview

Mapping Team Members are required to produce the agency's standard map products using the agency's GIS package.

Duration

Estimated 3 hours plus pre-course reading and practice (note the duration will depend on the number and complexity of the image data and the number of trainees).

Customisation

Much of the training is agency-specific and the agency **will need to customise the materials in this section** to account for:

- Emergency type managed by the agency (e.g. flood, fire);
- Agency map products; and
- Agency standards for map products.

General approach

This session contains the following parts:

Part 1 – Review of the pre-course reading (Learner Guide Section 6) 30 mins

Part 2 – Agency map products and standards 30 mins

Part 3 – Production of standard agency maps (exercise) 2 hours

Resources

- Learner Guide Section 8;
- PowerPoint presentation (updated with agency information);
- Computer per person or pair (loaded with agency GIS and map data); and

- Agency standard map products.

Part 1 - Review pre-course reading

Session aim

The session aim is to review the pre-course reading (Learner Guide Section 8).

Duration

Estimated 30 minutes

Resources

The Learner Guide contains generic underpinning knowledge for this training, which Learners should have completed prior to the session.

Instructional design

Review the self-assessment questions and answers from the pre-course reading.

Check for understanding.

Part 2 – Agency map products and standards

Session aim

The session aim is to introduce learners to the standard mapping products produced by the agency for emergency management purposes and the cartographic conventions and quality standards that apply.

Duration

Estimated time – 1 hour

Learning outcomes

At the end of this session, learners should be able to:

1. Identify the range of different types of maps, used by the agency for emergency management, and their respective purposes.
2. Identify the cartographic conventions applying to emergency service mapping products.
3. Identify the major elements and features of emergency maps.
4. Identify agency requirements for the timeliness, quality, file naming and storage of map products.

Resources

- PowerPoint presentation (upgraded with samples of the agency's standard map products)
- Samples of the agency's standard map products.

Instructional design

PowerPoint presentation and discussion

Viewing of sample agency standard map products

Part 3 – Production of standard agency maps

Session aim

This is a practical session where learners are required to produce the standard map products of the agency.

Duration

Estimated duration – 2 hours +

Note that participants will require considerably more practice prior to being competent.

The agency will need to determine how much practice occurs during the training and how much is undertaken in the learner's own time.

Learning outcomes

At the end of this session, learners should be able to:

1. Produce simple maps for emergency management purposes using the (basic) graphic design package of the agency.
2. Use spatial reference systems to measure, locate and plot features on maps.
3. Meet agency requirements for the timeliness, quality, file naming and storage of map products
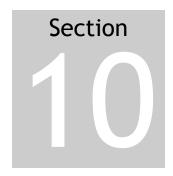4. Apply agency OHS practices at all times while working in the Mapping Team.

Resources

- Computer per person or pair (loaded with agency GIS and map data);
- Hard copy mapping data; and
- Instructions for the production of standard agency maps.

Instructional design

This is a practical session where learners are to practice producing the standard maps required by the agency.

Session plan – Apply GIS software to problem-solving techniques

Session overview

This session involves the learner applying GIS) software to resolve problems, using spatial and aspatial data in an integrated manner. It requires the learner to operate GIS applications correctly in order to perform the required tasks of a spatial project.

Duration

Estimated 3 hours plus pre-course reading and practice (note the duration will depend on the number and complexity of the image data and the number of trainees).

Customisation

Much of the training is agency-specific and the agency **will need to customise the materials in this section** to account for:

General approach

This session contains the following parts:

Part 1 – Review of the pre-course reading (Learner Guide Section 6)   30 mins

Part 2 – Querying spatial data.   30 mins

Part 3 – Geo-processing   1 hour

Part 4 – Producing information products   1 hour

Resources

- Learner Guide Section 8;

- PowerPoint presentation (updated with agency information);

- Computer per person or pair (loaded with agency GIS and map data);

- Spatial datasets;

- Instructions regarding information products to be developed; and

- Sample information products developed using spatial information.

Part 1 - Review of pre-course reading

Session aim

The session aim is to review the pre-course reading (Learner Guide Section 8).

Duration

Estimated 30 minutes

Resources

The Learner Guide contains generic underpinning knowledge for this training, which Learners should have completed prior to the session.

Instructional design

Review the self-assessment questions and answers from the pre-course reading.

Check for understanding.

Part 2 – Querying spatial data

Session aim

The session aim is to train learners to query spatial data using GIS, and then summarise and present the results graphically

Duration

Estimated time -30 mins

Learning outcomes

At the end of this session, learners should be able to:

1. Access, read, interpret and edit spatial data updates to ensure they are in an acceptable format to meet functional requirements.

2. Display spatial information as features (entities) and attributes according to agency requirements.

3. Generate summary results using feature (entity) and attribute queries.

4. Present the results from feature/attribute queries graphically.

5. Apply feature/attribute queries when using univariate statistics to explore the dataset.

6. Solve routine spatial data problems or irregularities during the course of the activity or via consultation with relevant personnel.

Resources

- Computer per learner (or pair) loaded with the agency's GIS and related datasets
- Pre-prepared activities relating to:
  - Simple feature and attribute queries
  - Presenting results from queries graphically

Instructional design

Trainers to explain and demonstrate how to query.

Learner to practice using pre-prepared activities (e.g. calculation of the hectares within the incident perimeter and presentation of these results graphically).

Part 3 – Geo-processing

Session aim

This is a practical session where learners are required to produce the standard map products of the agency.

Duration

1 hour

Learning outcomes

At the end of this session, learners should be able to:

1. Integrate new data with spatial and aspatial data to meet the requirements of the information product.
2. Apply geospatial techniques using GIS software to combine spatial layers and highlight selected data features as required by the information product.
3. Apply spatial overlay techniques using GIS software as required for the production of an information product.

Resources

- Computer per learner (or pair) loaded with the agency's GIS and related datasets;
- Pre-prepared activities relating to:
  - Integrating new data;
  - Integrating aspatial data (such as a table of population data from the census);
  - Geo-processing analysis functions such as:
    - Buffer;
    - Clip;
    - Dissolve;
    - Intersect;
    - Merge;

         ▪   Union; and

     o   Spatial overlay.

Instructional design

Trainers to explain and demonstrate how to undertake the geo-processing function.

Learner to practice using pre-prepared activities.

Part 4 – Producing information products

Session aim

This is a practical session where learners are required to produce the standard map products of the agency. This session is the culmination of the learning for Mapping Team Member.

Duration

1 hour

Learning outcomes

At the end of this session, learners should be able to:

1. Incorporate maps into the required information product.

2. Incorporate results, summary statistics and graphs from the GIS software into the required information product.

3. Identify and comply with organisational, legal and ethical requirements for the production of mapping products.

4. Test and validate the cartographic integrity of the information product to ensure accuracy and quality.

Resources

- Computer per learner (or pair) loaded with the agency's GIS and related datasets; and

- Pre-prepared activities relating to the required information products.

Instructional design

Learners to practice producing the required information products. Examples could be:

- Standard map products; and

- Customised products.

Evaluation

Evaluation strategy

AFAC Inc, through the Manager of Learning and Development, is responsible for the ongoing monitoring and evaluation of this TRK.

An advisory group comprising member agencies of the Emergency Management Spatial Information Network of Australia (EMSINA), will conduct an evaluation of the industry needs and current training at least annually.

The delivery of this training will be evaluated as part of an ongoing process. The pro-forma provided in this document is an example only. It can be used to gather feedback on the training delivery and resources for this unit as part of the ongoing process.

Review and amendments

These resources are managed under a document and version control system which includes a formal review and amendments process and will be formally reviewed at periodic intervals as determined by the needs of individual agencies.

A pro-forma for the tracking and recording of any changes or amendments required is included at the end of this document. This record of recommended changes can then be tabled at the formal review.

Training Course Evaluation Questionnaire

Please take the time to complete this evaluation form. Your feedback is important and it allows for the measurement of the effectiveness of the training program and to assist us in continuous improvement. Please read the questions below and tick the rating scale to indicate your answer.

Course Title:					
Trainer Name:					
Learner Name: (Optional) **Phone: (Optional)**					
Date:					
	Inadequate	**Fair**	**Good**	**Very Good**	**Excellent**
Delivery and content					
Trainer knowledge of subject	☐	☐	☐	☐	☐
Trainer motivation of learners	☐	☐	☐	☐	☐
Trainer was clear and easy to understand	☐	☐	☐	☐	☐
Trainer encouraged participation and answered questions clearly	☐	☐	☐	☐	☐
Learning objectives and outcomes were clear	☐	☐	☐	☐	☐
Relevance of learning content	☐	☐	☐	☐	☐
Usefulness of learning resources (course notes or workbook)	☐	☐	☐	☐	☐
The learning resources were easy to follow	☐	☐	☐	☐	☐
Usefulness of the learning resource as a reference guide	☐	☐	☐	☐	☐
Assessment					
Clear statement of assessment method and criteria	☐	☐	☐	☐	☐
The assessment was appropriate and relevant	☐	☐	☐	☐	☐
The assessment was conducted fairly	☐	☐	☐	☐	☐
Facilities					
Adequacy of venue for the course and audience	☐	☐	☐	☐	☐
Adequacy of equipment and resources	☐	☐	☐	☐	☐
Further comments and suggestions					

Amendment pro-forma

Amendment			Brief Description of Amendment	Effected	
No	Date	Pages		Initial	Date

Appendices

(insert in here any checklists, forms, standard templates etc which are relevant to the training resources.)

For example:

- checklist of trainer and learner resources required for delivery
- checklist and copies of all templates available for insertion into TRK
- nomination/application form (optional/agency specific)
- confirmation letter/joining instruction for learners (optional/agency specific)
- pre-activity questionnaire (optional/agency specific).